

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/034023 A3

(51) International Patent Classification⁷: **C07D 253/065**,
A61K 31/53, A61P 35/00

CA 91711 (US). GRIBBLE, Gordon, W. [US/US]; 15 El-
dridge Street, Lebanon, NH 03766 (US).

(21) International Application Number:
PCT/US2003/031988

(74) Agents: LICATA, Jane, Massey et al.; Licata & Tyrrell
P.C., 66 East Main Street, Marlton, NJ 08053 (US).

(22) International Filing Date: 8 October 2003 (08.10.2003)

(81) Designated States (*national*): CA, JP, US.

(25) Filing Language: English

(84) Designated States (*regional*): European patent (AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(26) Publication Language: English

(30) Priority Data:
60/417,569 10 October 2002 (10.10.2002) US

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(71) Applicant (*for all designated States except US*):
TRUSTEES OF DARTMOUTH COLLEGE [US/US];
Technology Transfer Office, 11 Rope Ferry Road, Hanover,
NH 03755-1404 (US).

(88) Date of publication of the international search report:
26 August 2004

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): MOSKALEV, Niko-
lai V. [RU/US]; 750 West Bonita Avenue, #42, Claremont,

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: METHODS OF SYNTHESIZING 3-AMINO-1,2,4-BENZOTRIAZINES

(57) Abstract: An improved method of producing 3-amino-1,2,4-benzotriazines using nitrobenzene or a derivative thereof, a guani-
dine salt and a base as reactants is provided. The method is carried out at a moderate reaction temperature without producing halide
wastes derived from nucleophilic substitution and acid byproducts.



WO 2004/034023 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/31988

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07D 253/065; A61K 31/53; A61P 35/00
US CL : 544/183; 514/243

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 544/183; 514/243

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAS ONLINE, EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,175,287 A (LEE et al) 29 December 1992 (29.12.1992), see entire document especially examples 2, 3 and 4.	1

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search

22 June 2004 (22.06.2004)

Date of mailing of the international search report

15 JUL 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Venkataraman Balasubramanian

Telephone No. 571-272-1600